

**Rico-Argentine Mine - St. Louis Tunnel: Proposed Removal****Steven Way** to: Carol Campbell, David Ostrander

Cc: Curtis Kimbel

Bcc: Steven Way

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Carol,

As follow up to our discussion yesterday, below is a summary of the scope of the work that EPA discussed with ARCO on August 27th. The proposal that ARCO responded with was substantially less in scope for CERCLA Removal work and would rely on working through permitted actions with the State Water Division, and subsequently the Solid Waste program. Currently, ARCO has submitted an application for a discharge permit but has no plans in place for dealing with the other waste on-site. The application for the discharge permit proposes a 2013 system start-up. In the meantime, there are no provisions to deal with low flow conditions in the Delores river or address potential flood conditions that could impact the settling ponds. ARCO of course contends there is not current risk or impact.

**EPA Proposed Removal Scope:**

The current scope of this proposed Removal Action includes performing actions necessary to prevent the on-going release and potential release of hazardous substances (both aqueous and solid waste) being discharged from the St. Louis Tunnel and the associated settling ponds into the Delores River and surrounding wetlands. The specific removal actions would include:

- Removing settling pond sludge from all or a portion of the ponds and placing waste in an engineered on-site repository or approved off-site disposal facility. This action will require managing existing flow through the ponds to prevent additional release of waste and wastewater. (Total sludge estimate at 68,000 cyds in 11 ponds.)
- Placing engineered erosion controls such as riprap, revetments, or equivalent as needed to protect remaining treatment/settling pond systems and waste storage remaining within the 100 year flood plain;
- Installing an engineered flow-through hydraulic bulkhead in the St. Louis Tunnel adit. This will provide the ability to control flows to a WTP, if determined necessary, and prevent a potential blow out from the workings causing a major release of mine water and associated metal precipitates usually present in mine pools.
- Reducing the heavy metals concentrations in the effluent water discharging to the Dolores River as necessary to be protective of the water quality, and/or substantially reducing the flow from the Adit and associated workings such that the hazardous substances releases with mine drainage does not pose an on-going threat to water quality and the aquatic life

in the River. This may require an on-site active water treatment system(s), containing mine water within the underground mine workings, reducing influent to the underground mine workings and the associated hydraulic controls in the mine openings.

#### Other Facts:

- Land ownership involving the adit portal and the ponds is held in by multiple parties, including USDA-FS, and a portion of the area may be up for auction by the County. ARCO is attempting to work out an arrangement with the Town of Rico and other parties to hold title of certain portions of the land or have other agreements - not yet resolved. This has been in the works for many years.
- The metals/lime sludge in the ponds since 1996 remains a threat and no specific plans were offered by ARCO to manage these wastes other than coordinating it with the construction of the WTP. The ponds are unlined and release metals to the alluvial groundwater and river system.
- Long-term commitment to operation of a WTP is uncertain and what mechanism is going to be put in place with the State and ability to secure this from ARCO. (And, is a conventional lime treatment system the best long-term solution?)
- No provisions exist for temporary water treatment which may be needed in the event of low flow conditions in the Delores. An upward trend in discharge concentrations to the river is evidenced by: The current discharge concentration from the ponds in June 2010 was 3900 ug/L zinc, and in December 2004 it was about 3,000 ug/L, and in 2002 it was about 400 ug/L. The adit flow zinc concentration varies from about 3000 to 8000 ug/L or higher. The discharge flows proposed in the WTP application are from 2 cfs to 3.5 cfs.
- The Water Quality Analysis suggests the the maximum zinc concentrations in low flows (river potential low flows are projected at 3.2 cfs) that can be assimilated in the river is about 870 ug/l. Current discharge concentrations are more than 4 times higher than the assimilative capacity calculations.
- Generally, available water quality sampling shows WQS are not exceed - however, the data set is too limited to determine if WQS are being exceeded. (Most of the data is from ARCO sampling.) The acute standard for zinc is about 310 ug/L.
- ARCO has proposed to do a limited effort to reduce the current water level in Pond 18, that largest of the sludge holding ponds adjacent to the Delores River. This would be done under EPA oversight, but they do not want to do anything else under an AOC or UAO.
- EPA Removal program is planning on expanding our evaluation of the site given ARCO's position on not engaging more on our recommended scope.
- Other sources exist in the Silver Creek drainage that cause the creek to exceed WQS (a TMDL exist for Silver Crk.). This is downstream of the St. Louis Tunnel. Generally, data indicates that the St. Louis Tunnel and ponds are the most significant load to the Delores River.

#### Immediate Follow Up Needed:

1. ARCO has responded with the proposal to perform limited work this fall. We need to

indicate whether we are supportive of that and under what terms.

2. Do we want to attempt to coordinate our approach with CDPHE as how we deal with ARCO. Such as, allowing ARCO to work solely with CDPHE in designing and constructing a WTP, and EPA deals with the other aspects of the site - possibly including temporary water treatment as necessary to protect the river, pending a "permanent system".

If you would like to have a more extensive briefing on this with the attorneys we can make that happen. However, I do need to respond to ARCO's proposed work, which could entertain as an initial step.

Let me know if you would like to discuss this before talking with CDPHE.

Thanks,  
Steve

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